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10/565,803

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EXAMINER

MOORE, WALTER A

ART UNIT

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1794

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/565,803 | Applicant(s) KAWASAKI ET AL. | |
| | Examiner WALTER MOORE | Art Unit 1794 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Receipt of Remarks, Abstract, and Claims filed on 26 May 2009 is acknowledged. Claims 1-12 are currently pending. Claims 10, 11, and 12 are amended. If not repeated, all rejections and objections stated in the previous Office Action are withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 8, and 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Koizumi et al., USPN 6,491,992.

4. Regarding claim 1, Koizumi teaches a thermoplastic resin composition, comprising: a thermoplastic resin having a moisture vapor permeability of 1.0×10^{-13} ($\text{cm}^3 \cdot \text{cm} / \text{cm}^2 \cdot \text{sec} \cdot \text{Pa}$) or lower (see calculation below, Col. 4, In. 7-9); a unvulcanized rubber (Col. 9, In. 26), which is a halogenated isoolefin/para-alkylstyrene rubber (*halide of paramethyl styrene-polyisobutylene*, Col. 4, In. 57); and a moisture absorbent (Col. 6, In. 20-21). Koizumi also teaches the weight ratio of the thermoplastic resin to the unvulcanized rubber is 85/15 to 15/85 (Col. 5, In. 14). Koizumi teaches the content of

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the moisture absorbent is 10 to 70 parts by weight to 100 parts by weight of the total of the thermoplastic resin and the unvulcanized rubber (Col. 6, ln. 35-36).

5. Regarding the calculation of moisture vapor permeability, the Specification (page 62) defines the moisture vapor permeability with the following equation: Moisture vapor permeability ($\text{cm}^3 \cdot \text{cm} / \text{cm}^2 \cdot \text{sec} \cdot \text{Pa}$) = $1.744 \text{E}10^{-14}$ x Moisture vapor transmission rate ($\text{g} / (\text{m}^2 \cdot 24\text{h})$) x thickness (mm). Koizumi teaches the thermoplastic resin has a water vapor permeability of $100 \text{ g} / (\text{m}^2 \cdot 24\text{h})$ or lower when the thickness of the thermoplastic resin is 30 micrometers (Col. 4, ln. 8-9). Therefore, Koizumi teaches a moisture vapor permeability of $5.232 \times 10^{-14} \text{ cm}^3 \cdot \text{cm} / (\text{cm}^2 \cdot \text{sec} \cdot \text{Pa})$ or lower. Calculation: MVP = $1.744 \text{E}14 \times 100 \text{ g} / (\text{m}^2 \cdot 24\text{h}) \times 0.03 \text{ mm}$.

6. Regarding claim 2, Koizumi teaches the resin can be low density polyethylene (Col. 4, ln. 14).

7. Regarding claim 3, Koizumi teaches the thermoplastic resin composition can include filler (talc, Col. 7, ln. 43).

8. Regarding claims 4 and 5, Koizumi teaches using the thermoplastic composition as the sealing material (Col. 11, ln. 2-3) and spacer (Fig. 1(a), Ref. No. 3, Col. 11, ln. 13-14) in an insulated glass unit (*insulating glass*, Col. 11, ln. 1).

9. Regarding claim 6, Koizumi teaches an insulating glass unit (*insulating glass*, Col. 11, ln. 1) comprising: a spacer (Fig. 1(b), Ref. No. 3, Col. 11, ln. 41), which is made of the thermoplastic resin composition (Col. 11, ln. 1-3) and serves as a sealant (Col. 11, ln. 32-33). Koizumi also discloses adhesive layers between the thermoplastic resin composition and glass (Fig. 1(b), Ref. No. 4, Col. 11, ln. 41).

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10. Regarding claim 8, Koizumi teaches the insulated glass unit (*insulating glass*, Col. 11, ln. 1) includes two glass plates (Fig. 1(a), Ref. No. 1a and 1b, Col. 11, ln. 33-34), with the thermoplastic spacer between the plates (Fig. 1(a), Ref. No. 3, Col. 11, ln. 7), and an air layer formed between the two glass plates (air layer, Fig. 1a, Ref. No. 2, Col. 11, ln. 9-10).

11. Regarding claim 10, Koizumi teaches an insulated glass unit (*insulating glass*, Col. 11, ln. 1) comprising two glass plates (Fig. 1(a), Ref. No. 1a and 1b, Col. 11, ln. 33-34), a thermoplastic spacer between the sheets (Fig. 1(a), Ref. No. 3, Col. 11, ln. 13-14) that serves as the sealant (Col. 11, ln. 2-3), and creates an air layer between the sheets (air layer, Fig. 1a, Ref. No. 2, Col. 11, ln. 9-10). Koizumi also teaches the spacer maintains the glass plates at a predetermined distance (Col. 11, ln. 10).

12. Regarding claim 11, Koizumi teaches an insulated glass unit (*insulating glass*, Col. 11, ln. 1) comprising: two glass plates (Fig. 1(b), Ref. No. 1a and 1b, Col. 11, ln. 42), the spacer between the glass sheets that serves as the sealant (Fig. 1(b), Ref. No. 3, Col. 11 ln. 41-42), an adhesive between the glass plates and the spacer (Fig. 1(b), Ref. No. 4, Col. 11, ln. 44-45). Koizumi also teaches the spacer maintains the glass plates at a predetermined distance (Col. 11, ln. 10).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 7, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi et al., USPN 6,491,992 in view of Bowser, USPN 4,622,249.
15. Koizumi is relied on as above regarding the section 102 rejection.
16. Regarding claims 7, 9, and 12, Koizumi does not teach an insulating glass unit with a secondary seal.
17. Bowser is drawn to an insulated glass unit (*multiple pane unit*, Abstract) comprised of two spaced apart sheets of glass (Fig. 1, Ref. Nos. 22 and 24 Col. 4, ln. 4). Bower teaches a sealing assembly maintains the sheets in a spaced apart relationship (Col. 4, ln. 5-6). Bowser teaches the sealing assembly comprises an inner and outer element (Col. 4, ln. 34). The outer element in Bowser is the structural equivalent to the secondary sealant claimed (Bowser, Fig. 1, Ref. No. 36). Bowser teaches using both a primary and secondary sealant aids in evenly distributing loads (e.g. wind loads, static loads, thermal loads, mechanical stresses) between two sealants (Col. 3, ln. 51-52). Bowser teaches distributing the loads extends the useful life of the insulated glass unit and enhances its performance by minimizing the probability of forming disuniformities in the thickness of the air space during the life of the unit (Col. 3, ln. 56-60).
18. It would have been obvious to one of ordinary skill in the art at the time of invention to use a secondary sealant, as taught by Bowser, in the insulated glass unit taught in Koizumi, to obtain an insulated glass unit with a thermoplastic spacer and a secondary sealant. One of ordinary skill in the art would have been motivated to use a secondary sealant in an insulated glass unit because using a secondary sealant aids in

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extending the useful life and performance of the insulated glass unit (Bowser, Col. 3, ln. 59-60).

Response to Arguments

19. Applicant's arguments filed 26 May 2009 have been fully considered but they are not persuasive.

20. Applicant argues that Koizumi does not teach an unvulcanized rubber in the composition of claim 1. The Examiner's position is Koizumi teaches the composition as *claimed* in claim 1. Specifically, the intermediate product taught in Koizumi is relied upon in anticipating the present claims, not the final vulcanized product.

21. The fact that Koizumi teaches a method of processing the composition, such that the rubber component is vulcanized and then incorporated into an insulated glass unit, is immaterial to the claim as written. First, the term "comprising" is an inclusive term, which does not exclude the presence of a crosslinker in the thermoplastic resin composition of claim 1. Second, Examiner directs the Applicant's attention to Koizumi column 9, lines 25 to 30, where Koizumi clearly states an unvulcanized rubber is mixed with the thermoplastic component of the composition. Additionally, each Koizumi Example discloses a thermoplastic resin composition comprising an unvulcanized rubber (butyl rubber in Ex. 1-8 and 10 and EPDM in Ex. 9). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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22. Regarding claims concerning an insulated glass unit with the composition of claim 1 (i.e. claims 4-12), the claims claim an insulated glass unit with a spacer “made of” the thermoplastic resin composition of claim 1. The claims do not claim that the rubber component in the thermoplastic resin composition is never vulcanized. Koizumi does teach the rubber component of the resin composition is vulcanized. However, Koizumi teaches an insulated glass unit with a spacer “made of” the thermoplastic resin composition of claim 1. Therefore, Koizumi discloses the claimed subject matter.

23. After the regarding the status of the rubber as unvulcanized on page 7 of the Remark, the Applicant simple states the advantages of the invention. These statements do not persuade the Examiner that the invention as claimed is distinguishable from the prior art.

24. On page 10 of the Remarks, the Applicant recognized that claims 7, 9, and 12, are rejected over Koizumi in view of Bower. However, Applicant makes no comments regarding the Bower reference.

Conclusion

25. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WALTER MOORE whose telephone number is (571) 270-7372. The examiner can normally be reached on Monday-Thursday 9:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WM/
Walter Moore, Examiner AU 1794

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794